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TRIP REPORT
OSTP DELEGATION TO CHINA
17-28 SEPTEMBER, 1994

Background

From 17-28 September 1994, Jane Wales, Associate Director for National Security and International Affairs in the Office of Science and Technology Policy, led an official White House delegation to China and Hong Kong to promote science and technology cooperation. Other OSTP members of the delegation were Dr. Jeff Schweitzer, Assistant Director for International Affairs, Lonnie Keene, and Deanna Behring. Joe Schechter, from the Commerce Department's Technology Administration, joined the OSTP delegation for part of the trip.

Purpose

The goals of the trip were twofold: 1) to identify potential areas for US-PRC bilateral cooperation; and 2) to plan for the next meeting of the US-PRC S&T Joint Commission, possibly to take place in Beijing in early 1995. The meeting would be co-chaired by Dr. Gibbons, the President's Science Advisor, and Professor Song Jian, China's State Science and Technology Commission Chairman.

Meetings in China and Hong Kong

The delegation visited four cities in China--Beijing, Xi'an, Shanghai, Guangzhou--and Hong Kong. We conducted meetings with representatives from throughout China's S&T community, including in government, academia, and the private sector. At all meetings, the Chinese were very candid, eager to engage in a dialogue and share their opinions about S&T cooperation. All were also supportive of a visit by Dr. Gibbons early next year; many made suggestions for his trip. Following is a brief overview of our meetings.

Beijing. On our first morning in Beijing, we met with the President of the Chinese Academy of Sciences, Zhou Guanghua, as well as the Vice Chairman of the State Science and Technology Commission, Hui YongZheng.

- o In our meeting with CAS President Zhou, we reviewed the span of current cooperative programs, such as clean coal technology, examination of the nitrogen cycle in China, and the impact of population growth on the environment. We discussed the current move in China away from supporting basic research towards the commercialization of technology, and agreed that future cooperation efforts should focus limited resources on activities and projects that simultaneously meet the objectives of supporting basic research, promoting environmental protection, and advancing the commercialization of technology. President Zhou suggested that Dr. Gibbons make site visits to gas institutes and their high energy physics facility prior to the S&T Joint Commission meeting.

- o SSTC Vice Chairman Hui reviewed China's current S&T programs--the "Scaling the Heights" program, the "863" program, the "Torch" program, and the "Spark" program. Vice Chairman Hui also discussed Beijing's efforts to merge S&T goals into China's ninth five year economic plan. He then highlighted four key areas for future S&T cooperation with the United States: Agricultural Technologies (water resources, new seeds through biotechnology, post-harvest storage, development of new food products, aquaculture, and silvaculture); Energy (clean coal technology and new sources of energy); Transportation (including high speed rail); and Telecommunications. Dr. Hui was enthusiastic and receptive to the idea of a visit by Dr. Gibbons for the Joint Commission meeting in early 1995. He also offered to arrange visits for Dr. Gibbons outside of Beijing and mentioned that Dr. Gibbons' interest in high energy physics could be accommodated by appropriate site visits.

We also met with the private sector--both Chinese and American.

- o Our meeting with the Stone Corporation--the biggest high-tech enterprise group in China and the first non-government Chinese enterprise to be listed on the Hong-Kong stock exchange--provided a good window on the development of the "private" sector in China. Stone produces computer hardware and software, as well as peripherals, and acts as a distributor for major western computer companies. The Chairman of Stone Corporation stressed the desire for increased cooperation and joint ventures with US companies.
- o We met with representatives from various American telecommunications companies, all of whom were excited about market potential in China, but concerned about persistent problems. Problems identified included complications arising from the decentralization of authority to the provinces, foreign competitive practices in contract bidding, and restrictions on foreign investment and the provision of services. All also agreed that the Chinese technical expertise does not make up for their lack of experience in management, marketing, systems integration, and a very weak service sector.

Our time in Beijing also included a trip to Beijing University where we were briefed by Professor Tang, Director of Beijing University's Center of Environmental Studies (CES) and Associate of the Center for Sustainable Development (CSD), on the activities of the Centers. CES is working with local, provincial, and national governments to increase the awareness of and need for understanding of environmental factors in land use and economic planning. A primary objective of the center is to integrate natural and social sciences and environmental law. The center is cooperating with the University of Michigan, University of North Carolina, and the University of Delaware, as well as the US EPA. The CSD has a primary goal of examining China's priorities under Agenda 21. The delegation then discussed these and other environmental projects at a luncheon with Keith Clemenger, Director of the Beijing office of the Committee on Scholarly Communication with China.

Xi'an. Xi'an was a quick side trip for the delegation but gave us an important opportunity to see something other than the rapidly developing cities along China's eastern shore. In Xi'an, a more typical Chinese city west of Beijing, we viewed extreme--and perhaps

irreversible--environmental degradation. Soil erosion, agricultural burning, and emissions from coal-burning plants have resulted in serious air and water pollution problems. The delegation also learned of a Boeing coproduction facility located outside of Xi'an that could be a worthwhile visit during Dr. Gibbon's trip.

Shanghai. In Shanghai, the delegation visited Fudan University, where we were greeted by the President and several key faculty members. We heard about ongoing cooperative programs between Chinese and US scholars and toured their computer design lab and high energy physics lab. In the afternoon, we toured the Pu Dong area of Shanghai--the area east of Shanghai bordering the Pacific Ocean--which is becoming the fastest growing development zone in China and the center for financial and commercial activity. We received a briefing by the general manager of Zhang Jiang High-Tech Development Zone--one of the four key subzones of Pu Dong--specifically designed to attract foreign investment and cooperative research ventures in biotechnology, informatics, and electronics. The delegation did not have time to visit the other three subzones; the free trade zone along the Pacific coast--the biggest port in China--would be an interesting stop for Dr. Gibbons' delegation.

Guangzhou. Our short time in Guangdong province was spent in Shenzhen, one of China's first Special Economic Zones (SEZ). We first met with the Director of the International Office of Shenzhen University, a school designed specifically to train future managers for the SEZ. Given the environmental degradation we witnessed in our two-and-a-half hour drive between Guangzhou and Shenzhen, we were disappointed to learn that the school had no environmental program or an occupational health safety program, nor was there reportedly any student or faculty interest in such programs. We also met with the President of Shenzhen University along with the President of International Software Development Corporation, a cooperative venture among IBM, Shenzhen University, and a local company to develop software and systems for local banks, hotels, etc.

Hong Kong. In Hong Kong, the delegation was greeted by Dr. Eugene Wong, former Associate Director of OSTP under the Bush Administration and currently Pro Vice Chancellor at Hong Kong University of Science and Technology (HKUST). Dr. Wong had set up an impressive morning of briefings from the President of HKUST, Chia Wei Woo, and key faculty members on Hong Kong's S&T policy and current cooperative S&T efforts between Hong Kong and China. According to President Chia, HKUST receives the lion's share of the official funding available for research in Hong Kong. The Hong Kong government and funding agencies, however, exert much less control than their US counterparts over the research agenda. HKUST has very good working relationships with researchers in the United States as 60 percent of its faculty holds doctorates from institutions in North America. With regards to China, 24 percent of the faculty grew up on the mainland.

HKUST is positioning itself to be the premier technological institution in the region and a critical S&T link to China. Key projects at HKUST include:

- o **Biotechnology.** Professor Wong briefed us on a current cooperative venture with China to develop a sustained-release drug. According to Professor Wong, now that China has recognized the international patent system, cooperation in biotechnology with China has

become very attractive.

- o Environment. Gary Heinke, from the University of Toronto, runs HKUST's Institute for Environmental Studies. One of their first projects will be to conduct air quality measurements for the Hong Kong government. Future projects may include a regional "demonstration" project on Hainan Island in the South China Sea to demonstrate to the countries in the region that economic growth and environmental protection can occur simultaneously. HKUST is also working with PRC institutions to gather data and establish a data network, ECONET, which will eventually be expanded to all of Southeast Asia. The project, which is being encouraged by UNDP, will address issues of biodiversity, climate change, ocean movements, and perhaps ozone depletion.
- o Engineering/Manufacturing. Professor Joe Mize explained his current "enterprise modeling" project, which will model global supply change and management and control issues. The project was instigated by the Hong Kong government because of its concern that Hong Kong's manufacturing base was moving offshore to China. The goal is to develop management techniques that will allow Hong Kong to remain a regional manufacturing headquarters and avoid becoming a 100 percent service-based economy. A secondary benefit of this project is that it will allow economic development to move to the more rural reaches of China.

In Hong Kong, the delegation also met with Mr. S.K. Chan, Executive Director of the Hong Kong Productivity Center (HKPC), a quasi-government organization dedicated to helping Hong Kong companies improve productivity by assimilating new technologies, including automation, quality control, and environmental technologies. According to Mr. Chan, while the Hong Kong government has no S&T policy per se, it is seeking to prevent Hong Kong's manufacturing base from moving to China and leaving Hong Kong a 100 percent service economy. Through the HKPC, it also sponsors annual reports on one of four key industries—textiles, steel, plastics, and electronics. These four industries account for 80 percent of Hong Kong's exports.

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